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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,560	12/05/2003	Philip J. Ellerbrock	038190/270520	4332

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EXAMINER	
DANG, KHANH	

ART UNIT	PAPER NUMBER
2111	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/729,560	ELLERBROCK ET AL.	
	Examiner	Art Unit	
	Khanh Dang	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karolys et al. (Karolys).

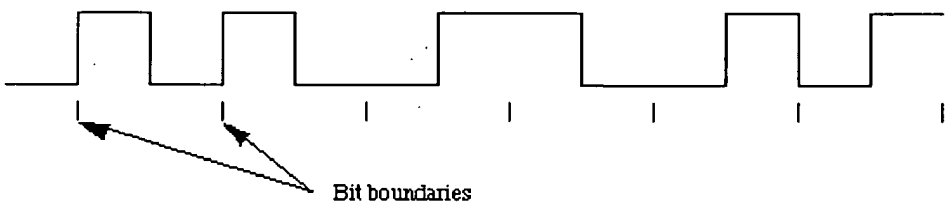
With regard to claims 1-3, 7-9, 13-15, 19-21, Karolys discloses a communication system (shown generally at Fig. 2) adapted to interconnect a bus controller (BCM 28 connected to a host 14) with an associated data channel (constituted by a sensor or transducer 10, column 1, lines 50-61; column 3, lines 51-60; column 5, lines 22-30) via a common digital bus (24), the communication system comprising: a bus controller (BCM 28 connected to a host 14) connected to the common digital bus (24) for communicating in an asynchronous mode with a data channel (constituted by a sensor or transducer 10, column 1, lines 50-61; column 3, lines 51-60; column 5, lines 22-30) across the common digital bus (24); and a network device interface (TBIM 26) connected between the common digital bus and (24) an associated data channel (constituted by a sensor or transducer 10, column 1, lines 50-61; column 3, lines 51-60; column 5, lines 22-30), wherein said network device interface (TBIM 26) transmits commands to and receives data from the associated data channel (constituted by a

sensor or transducer 10, column 1, lines 50-61; column 3, lines 51-60; column 5, lines 22-30) based on commands from said bus controller (BCM 28 connected to a host 14). Karolys also disclose the use of NZR encoding for the messages communicated via bus (24.

Karolys does not disclose that the messages transmitted by the bus controller contain a plurality of bits having a value defined by a transition between first and second states of the bits, wherein said network device interface evaluates the messages transmitted by said bus controller in order to determine a timing of the data sequence of the message and uses the determined timing to communicate with said bus controller.

However, such encoding technique is old and well-known in the art as Manchester encoding. Manchester encoding, long been considered as an alternative to NZR encoding, is a binary signaling mechanism that combines data and clock into "bit-symbols." Each bit-symbol is split into two halves with the second half containing the binary inverse of the first half; a transition always occurs in the middle of each bit-symbol

The following diagram shows a typical Manchester encoded signal with the corresponding binary representation of the data (1,1,0,1,0,0) being sent.



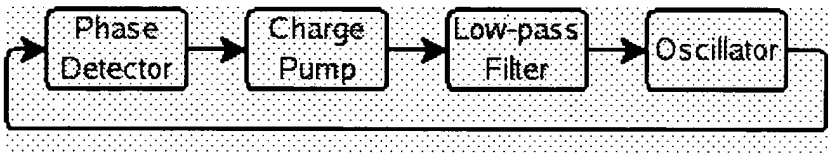
The waveform for a Manchester encoded bit stream carrying the sequence of bits 110100.

In the Manchester encoding shown, a logic 0 is indicated by a 0 to 1 transition at the center of the bit and a logic 1 is indicated by a 1 to 0 transition at the center of the bit. Note that signal transitions do not always occur at the 'bit boundaries' (the division between one bit and another), but that there is **always** a transition at the center of each bit. A Manchester encoded signal contains frequent level transitions which allow the receiver to extract the clock signal and determine the timing. See also "Manchester Encoding," cited below as evidence of well-known prior art. Further evidence can be found in Hanna et al., Fig. 2, and description thereof, column 1, lines 22-23; column 1 line 35 to column 2, line 13. With regard to claims 4, 10, 16, and 22, it is clear that the messages transmitted by said bus controller contain a plurality of bits having a value defined by a transition between first and second states that occurs at the center of each bit. See above discussion regarding Manchester encoding.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Manchester encoding instead of NZR encoding in the communication system of Karolys, since the Examiner takes Official Notice that Manchester encoding, as explained above, is old and well-known in the art (as an alternative to NZR encoding); and using Manchester encoding instead of NZR encoding in Karolys only involves ordinary skill in the art for the purpose of providing a "number of advantages" over the NZR encoding (see "Manchester Encoding," cited below). With regard to claims 5, 6, 11, 12, 17, 18, 23, and 24, in Manchester encoding, the clock/timing embedded in the data stream must be recovered using, for example, a

phase locked loop (see "Manchester Encoding" and Hanna regarding oscillator) to decode the value and timing of each bit.

A typical Phase Locked Loop, shown below, must include an oscillator.



Thus, it is clear that the network device interface (TBIM) must use the timing determined from evaluation of messages transmitted by the bus controller in place of timing provided by the local oscillator, according to the principle of Manchester encoding. Note also that Applicants clearly state in the originally filed specification that "[i]t must be understood that for any device to receive asynchronous serial data, it must be able to acquire the timing of the data sequence from the serial data stream. Normally, the receiver of the serial asynchronous data must have a local oscillator to cause its receiver to operate, and recover the timing information from the serial data. Once the timing information has been extracted, the asynchronous receiver is able to receive serial data at certain rates, plus or minus a certain deviation from these rates, given this local oscillator frequency. Manchester encoding of serial data causes a transition from high to low or low to high in the center of every bit. This makes it easy to extract the necessary timing information from the serial data stream. Because it is so easy to extract the timing information from the Manchester encoded serial data stream, a

relatively large deviation from the expected data rate, based on the local oscillator can be tolerated. This tolerance to relatively large deviations from the expected data rates allows each NDI receiver to use a low accuracy local oscillator to receive the Manchester encoded data."

Response to Arguments

Applicants' arguments filed 5/10/2005 have been fully considered but they are not persuasive.

At the outset, Applicants are reminded that claims subject to examination will be given their broadest reasonable interpretation consistent with the specification. *In re Morris, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997).* In fact, the "examiner has the duty of police claim language by giving it the broadest reasonable interpretation." *Springs Window Fashions LP v. Novo Industries, L.P.,* 65 USPQ2d 1862, 1830, (Fed. Cir. 2003). Applicants are also reminded that claimed subject matter not the specification, is the measure of the invention. Disclosure contained in the specification cannot be read into the claims for the purpose of avoiding the prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d, 155 USPQ 687 (1986).

With this in mind, the discussion will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitations that are not in the claims or any arguments that are irrelevant and/or do not relate to any specific claim language will not be warranted.

The 112 Rejection:

The rejection under 35 USS 112 is withdrawn in view of Applicants' amendment to the claims.

The 103 Rejection:

With regard to the Fairhurst article (Manchester Encoding), Applicants argue that "[w]ith regard to the rejections, Applicants initially note that the Fairhurst article is not prior art. The article is dated January 9, 2001. The present application claims priority to U.S. Application No. 09/735,146, filed December 12, 2000, which is prior to the publication date of the Fairhurst article." In response to Applicants' argument, it is clear that January 9, 2001 is only the date when the Fairhurst article is posted on the Internet. Manchester encoding is named after the University of Manchester, where the first recorded use of it occurred in the late 1940's. It is a digital phase modulation encoding method which has the following advantages over NRZ (non return to zero) signals such as those used in conventional TTL/CMOS logic. These are:

1. A separate clock is not required.

2. There are no long strings of logic '1' or logic '0' levels.

3. There is no DC component and so a signal encoded by it can be AC coupled.

See Manchester Encoding by Roger Forster, and definition of Manchester Code from Wekipedia, both cited below.

With regard to the Karolys and Hanna, Applicants argue that "the '108 Karolys patent nowhere teaches or suggest [sic] asynchronous communication. The patent specifically discloses use of a clock 206 at each TBIM for synchronizing communications with the bus controller. At no pointing the disclosure, does the '108 Karolys patent disclose detect bit rate from the transmitted signal to either correct or replace the signal from the local oscillator 206." Applicants further argue that "Hanna patent discloses clock recovery, not determination of bit rate to correct or replace a local oscillator signal." At the outset, it is noted that the claims are rejected under 35 USC 103(a) as being obvious over Karolys and Hanna or the Fairhurst article. It is also noted that the language "determination of bit rate to correct or replace a local oscillator signal" cannot be found in any of the claims. In any event, in Karolys, in view of the teaching of Hanna or the Fairhurst article, it is clear that the network device interface (TBIM) must use the timing determined from evaluation of messages transmitted by the bus controller in place of timing provided by the local oscillator, according to the principle of Manchester encoding as discussed in Hanna or the Fairhurst article. Note also that one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants also argue that "Applicants note that the inventors of the '108 Karolys patent were faced with a similar issue to that of the present invention; provide a low cost networked solution. However, the inventors of the '108 Karolys patent, which one would

presume are skilled in the art, did not think to use asynchronous communication by detecting bit rate of the transmitted signal. Instead, looking at the same problem as the current inventors, the inventors of the '108 Karolys choose not to use asynchronous communication in general, much less use of the transmitted signal to set bit rate. Instead, the inventors of the '108 Karolys patent chose to a more expensive and complex system that employs clocks for each TBIM. Given that the inventors of the '108 Karolys patent are ones skilled in the art and presumably knew of the '119 Hanna patent, but did not think to use asynchronous communication, Applicants respectfully submit that the claims are not obvious. The Office Action' allegation that it would have been obvious to combine the '119 Hanna patent with the '108 Karolys patent is speculative at best. Applicants instead argue that the failure of the inventors of '108 Karolys patent to use asynchronous communication by determining bit rate from the transmitted signal is proof of the non-obviousness of the claims." At the outset, it is noted that the claims are rejected under 35 USC 103(a) as being obvious over Karolys and Hanna or the Fairhurst article. In response to Applicants' argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Further, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413,

208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In addition, the issue of whether "the inventors of the '108 Karolys patent are ones skilled in the art and presumably knew of the '119 Hanna patent, but did not think to use asynchronous communication" is irrelevant to the 35 USC 103 (a) rejection. The MPEP 2141 clearly states that "Office policy has consistently been to follow Graham v. John Deere Co. in the consideration and determination of obviousness under 35 U.S.C. 103. As quoted above, the four factual inquires enunciated therein as a background for determining obviousness are briefly as follows:

(A) Determining of the scope and contents of the prior art;

(B) Ascertaining the differences between the prior art and the claims in issue;

(C) Resolving the level of ordinary skill in the pertinent art; and

(D) Evaluating evidence of secondary considerations.

Manchester Encoding by Roger Forster, and "Manschester Code" definition from Wekipedia are cited as relevant art.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Khanh Dang at telephone number 571-272-3626.

Khanh Dang
Primary Examiner